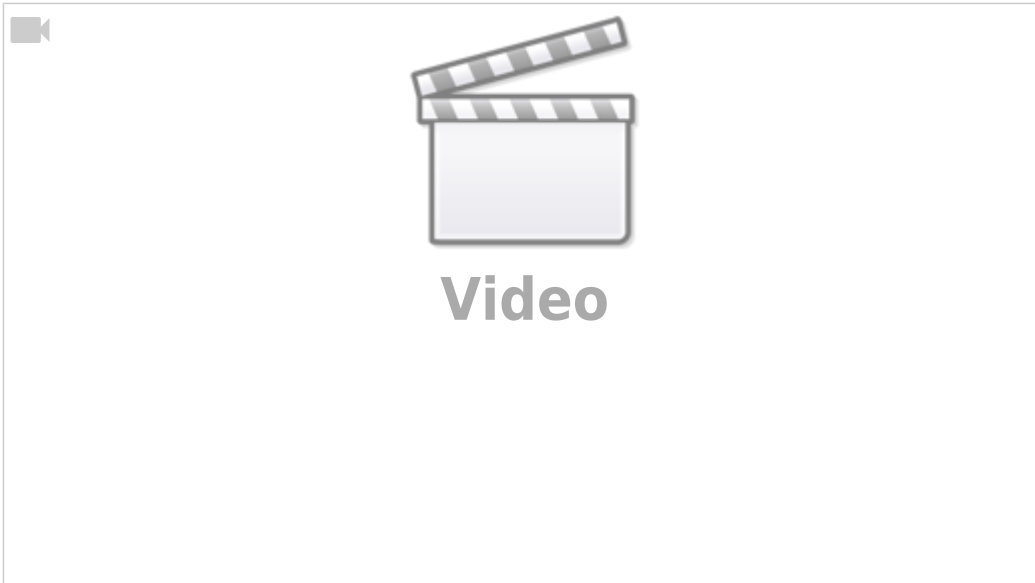


# Setting up Motion parameters



In order to properly set up the speed at which your system will be moving, granular settings for the axes speeds are available in **CNC Settings > Motion**. This tutorial introduces the basics of setting up the parameters for the speed/acceleration values in the Motion menu.

Upon opening CNC Settings > Motion, you are presented with the following screen:

**CNC Settings**

- Axes/Motors
- Inputs/Outputs/Sensors
- Network
- Motion**
- PLC
  - G-codes settings
  - DXF import settings
  - Macro List
  - Macro Wizard
  - Probing Wizard
- Preferences
- Screen
  - Work Offsets
  - Parking Coordinates
- Technology
- Camera
- 5 axes RTCP
- Panel/Pendant
- Hardware
- Advanced

**Motion Parameters:**

- Fast Drawing: ☐
- Sync G0 & (G1/G2/G3) OverSpeed: ☒
- Creep Speed (% of Cutting Speed):  \* time[s]

Parameter	Value	Min	Max	Step
Jog OverSpeed, %	100	10	250	10
G0 OverSpeed, %	100	5	100	5
G1/G2/G3 OverSpeed, %	100	5	150	1

Speed/Acceleration	Axis	Value	Min	Max	Step
Feed Speed	xy	5000	1	40000	1
Rapid Speed	xy	1000	10	30000	10
Jog Speed	xy	1000	10	30000	10
Acceleration	xy	600	1	20000	50
Feed Speed	z	500	1	10000	1
Rapid Speed	z	1000	10	30000	10
Jog Speed	z	6000	10	30000	10
Acceleration	z	600	1	20000	50
Acceleration	abc	500	1	20000	100
Feed Speed	abc	180	1	20000	100
Rapid Speed	abc	180	1	3000	1
Jog Speed	abc	180	1	3000	1

The settings inputted in this window focus on the current, maximum and minimum values for the feed speed, rapid speed, jog speed and acceleration of the machine in their respective axes.

Setting these values and restarting the program will mirror the new values in the Custom Machine Settings window:

**Speed**

	XY, mm/min	Z, mm/min	A, degree/s
Feed Rate	5000	500	180
Rapid Rate	1000	1000	180
Jog Rate	1000	6000	180
Acceleration	600	600	500

**Spindle**

On Delay, sec	0.5	Spindle Off Delay, sec	0.5
Lift Programming	ABS	Lift Height, mm	21.0
Lift Speed, mm/min	1000		

**Step-Dir Coolant control**

Rate, ml/hour	0.0	Ratio	1359
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**Mileage/Oil Change**

X Trip counter	81.007	of	100
Y Trip counter	20.262	of	100
Z Trip counter	13.295	of	100

In order to input the specific axis or axes, they can be named in the **Axes** column, as shown below. Note that both a single axis can be inputted ("x" for the x-axis), or a number of axes can be set to have the same values ("xyz" for the x-, y-, and z-axes).

**CNC Settings**

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**Speed/Acceleration**

	Axes	Value	Min	Max	Step
Feed Speed	xy	5000	1	40000	1
Rapid Speed	xy	1000	10	30000	10
Jog Speed	xy	1000	10	30000	10
Acceleration	xy	600	1	20000	50
Feed Speed	z	500	1	10000	1
Rapid Speed	z	1000	10	30000	10
Jog Speed	z	6000	10	30000	10
Acceleration	z	600	1	20000	50
Acceleration	abc	500	1	20000	100
Feed Speed	abc	180	1	20000	100
Rapid Speed	abc	180	1	3000	1
Jog Speed	abc	180	1	3000	1

The values themselves can be edited in their rows for each respective axis or axes. The maximum and minimum values serve as the limits for the movement speeds of the machine, while the current value should be set to be somewhere in-between the two.

SYS PLC Log Stat Info Support/Cutchart Config

**CNC Settings**

- Axes/Motors
- Inputs/Outputs/Sensors
- Network
- Motion**
- PLC
  - G-codes settings
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  - Macro List
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Fast Drawing

Sync G0 & (G1/G2/G3) OverSpeed ☒

Creep Speed (% of Cutting Speed)  \* time[s]

		Value	Min	Max	Step
Jog OverSpeed, %		100	10	250	10
G0 OverSpeed, %		100	5	100	5
G1/G2/G3 OverSpeed, %		100	5	150	1
Speed/Acceleration	Axes	Value	Min	Max	Step
Feed Speed	xy	5000	1	40000	1
Rapid Speed	xy	1000	10	30000	10
Jog Speed	xy	1000	10	30000	10
Acceleration	xy	600	1	20000	50
Feed Speed	z	500	1	10000	1
Rapid Speed	z	1000	10	30000	10
Jog Speed	z	6000	10	30000	10
Acceleration	z	600	1	20000	50
Acceleration	abc	500	1	20000	100
Feed Speed	abc	180	1	20000	100
Rapid Speed	abc	180	1	3000	1
Jog Speed	abc	180	1	3000	1

Note that editing of these values can be also done in the Custom Machine Settings window, as shown above. For example, when setting the value for the Jog Rate for the xy axes to 860 in the Custom Machine Settings, the value is automatically mirrored in the Motion settings.

Speed			
	XY, mm/min	Z, mm/min	A, degree/s
Feed Rate	5000	500	180
Rapid Rate	1000	1000	180
Jog Rate	860	6000	180
Acceleration	600	600	500

Spindle			
On Delay, sec	0.5	Spindle Off Delay, sec	0.5
Lift Programming	ABS	Lift Height, mm	21.0
Lift Speed, mm/min	1000		

Step-Dir Coolant control			
Rate, ml/hour	0.0	Ratio	1359

Mileage/Oil Change			
X Trip counter	81.060	of	100
Y Trip counter	20.288	of	100
Z Trip counter	13.295	of	100

**CNC Settings**

- Axes/Motors
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**Fast Drawing** ✗

Sync G0 & (G1/G2/G3) OverSpeed ☒

Creep Speed (% of Cutting Speed)  \* time[s]

		Value	Min	Max	Step	
Jog OverSpeed, %		100	10	250	10	
G0 OverSpeed, %		100	5	100	5	
G1/G2/G3 OverSpeed, %		100	5	150	1	
Speed/Acceleration	Axes	Value	Min	Max	Step	
Feed Speed	xy	5000	1	40000	1	✗
Rapid Speed	xy	1000	10	30000	10	✗
<b>Jog Speed</b>	<b>xy</b>	<b>860</b>	10	30000	10	✗
Acceleration	xy	600	1	20000	50	✗
Feed Speed	z	500	1	10000	1	✗
Rapid Speed	z	1000	10	30000	10	✗
Jog Speed	z	6000	10	30000	10	✗
Acceleration	z	600	1	20000	50	✗
Acceleration	abc	500	1	20000	100	✗
Feed Speed	abc	180	1	20000	100	✗
Rapid Speed	abc	180	1	3000	1	✗
Jog Speed	abc	180	1	3000	1	✗

This is done for the ease of the operator, to be able to switch the Feed/Jog/Rapid rates without going into the full settings window. However, since each profile is configured slightly differently, the Custom Machine Settings window in each particular profile might not have all the axes (or not the right configuration of axes) for the user's particular needs. By using the Motion menu, and adding the specific values and axes configurations as needed, one can edit each of the individual axes speeds despite them not being visible in the Custom Machine Settings window.

If a user requires a Custom Machine Settings window or any other window that is customized to their particular needs, they are able to do so by going into the XML files for their particular profile and editing them as described in the [MyCNC Screen Configuration manual](http://docs.pv-automation.com/mycnc/mycnc_setup/motion_setup). However, for the end-user's ease of use, the Motion settings will suffice if a customized Custom Machine settings window is not strictly necessary.

From:  
<http://docs.pv-automation.com/> - **myCNC Online Documentation**

Permanent link:  
[http://docs.pv-automation.com/mycnc/mycnc\\_setup/motion\\_setup](http://docs.pv-automation.com/mycnc/mycnc_setup/motion_setup)

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